

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
STANLEY B. BAKER  
MICROBAN PRODUCTS COMPANY  
11515 VANSTORY DRIVE  
SUITE 125  
HUNTERSVILLE, NC 28078

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference  2001.30		Date of mailing (day/month/year) <span style="float: right; font-weight: bold;">18 AUG 2004</span>
International application No.  PCT/US04/02712		International filing date (day/month/year) 30 January 2004 (30.01.2004)
International Patent Classification (IPC) or both national classification and IPC  IPC(7): B29C 39/00; C04B 26/00 and US Cl.: 106/15.05, 802, 817; 264/9, 319, 331.11, 333		Priority date (day/month/year) 11 July 2003 (11.07.2003)
Applicant  MICROBAN PRODUCTS COMPANY		

1. This opinion contains indications relating to the following items:

- ☒ Box No. I      Basis of the opinion
- ☐ Box No. II      Priority
- ☐ Box No. III      Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV      Lack of unity of invention
- ☒ Box No. V      Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI      Certain documents cited
- ☐ Box No. VII      Certain defects in the international application
- ☒ Box No. VIII      Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3 For further details, see notes to Form PCT/ISA/220

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Anthony J. Green Telephone No. 571-272-1700
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WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US04/02712

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c. time of filing/furnishing

☐ contained in international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/US04/02712

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>1-65</u>	YES
	Claims <u>NONE</u>	NO
Inventive step (IS)	Claims <u>14-18 and 52-56</u>	YES
	Claims <u>1-13, 15-51 and 57-65</u>	NO
Industrial applicability (IA)	Claims <u>1-65</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations:

Please See Continuation Sheet

**WRITTEN OPINION OF THE  
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International application No

PCT/US04/02712

**Box No. VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

Claims 1-65 are objected to under PCT Rule 66 2(a)(v) as lacking clarity under PCT Article 6 because claims are indefinite for the following reason(s):

In claim 1 it is unclear as to the types of natural aggregates, polymeric binders, curing agents and antimicrobial agents encompassed by the claim.

In claim 2 the phrase "said natural aggregate material" lacks proper antecedent basis in the claim.

In claim 4 the phrase "the total composition" lacks proper antecedent basis in the claim.

In claim 28 it is unclear as to the types of natural aggregates, polymeric binders, and antimicrobial agents encompassed by the claim.

In claim 30 the phrase "the natural aggregate material" lacks proper antecedent basis.

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/US04/02712

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

**V. 2. Citations and Explanations:**

Claims 1-13 and 19-27 lack an inventive step under PCT Article 33(3) as being obvious over Yamanashi et al (US Patent Application Publication No. 2003/0087074).

The reference teaches, in the abstract, the examples and the claims, the formation of an artificial stone composition comprising an aggregate such as quartz, an optional filler, a resin and which may also include a hardening agent (see example 1 and paragraph [0064]). Paragraph [0121] and [0122] teach that antimicrobial agents may be added if desired.

The instant claims are obvious over the reference. While the reference does not specifically teach the production of a composition comprising an antimicrobial agent, it does teach that one may add one and accordingly it is within the level of ordinary skill in the art to add an antimicrobial agent if one is needed or desired. As for the amount of the antimicrobial agent, it would be obvious to utilize effective amounts to prevent microbial growth.

Claims 1-13 and 19-22 and 24-27 lack an inventive step under PCT Article 33(3) as being obvious over Cuffaro et al (US Patent No. 3,670,060) in view of Yamanashi et al (US Patent Application Publication No. 2003/0087074).

Cuffaro et al teach, in the abstract, the examples and the claims, a method for manufacturing artificial marble comprising particulate natural stone, powdered thermosetting resin, a powdered catalyst for the resin and a pigment.

The instant claims are obvious over the reference. While the primary reference does not teach the addition of an antimicrobial agent it is known in the art to add antimicrobial agents to artificial stone compositions in order to prevent microbial attack (as taught by Yamanashi et al). Accordingly in the absence of evidence to the contrary it would have been obvious to add an antimicrobial agent to the composition of the primary reference and thus arrive at the instant invention absent evidence to the contrary. As for the amount of the antimicrobial agent, it would be obvious to utilize effective amounts to prevent microbial growth.

Claims 1-13 and 19-27 lack an inventive step under PCT Article 33(3) as being obvious over Mangrum (US Patent No. 3,278,662) in view of Yamanashi et al (US Patent Application Publication No. 2003/0087074).

Mangrum teaches, in the abstract, the examples and the claims, a method for manufacturing tile embodying stone particles comprising stone particles, a thermosetting resin, a catalyst for the resin and fillers.

The instant claims are obvious over the reference. While the primary reference does not teach the addition of an antimicrobial agent it is known in the art to add antimicrobial agents to artificial stone compositions in order to prevent microbial attack (as taught by Yamanashi et al). Accordingly in the absence of evidence to the contrary it would have been obvious to add an antimicrobial agent to the composition of the primary reference and thus arrive at the instant invention absent evidence to the contrary. As for the amount of the antimicrobial agent, it would be obvious to utilize effective amounts to prevent microbial growth.

Claims 1-13 and 19-22 and 24-27 lack an inventive step under PCT Article 33(3) as being obvious over Slocum (US Patent No. 5,321,055) in view of Yamanashi et al (US Patent Application Publication No. 2003/0087074).

Slocum teaches, in the abstract, the examples and the claims, a method for manufacturing a synthetic quartzite-marble/granite

**WRITTEN OPINION OF THE  
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PCT/US04/02712

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

material comprising a mixture of resins, granite particles and also peroxide as a catalyst for the resin and optionally fillers.

The instant claims are obvious over the reference. While the primary reference does not teach the addition of an antimicrobial agent it is known in the art to add antimicrobial agents to artificial stone compositions in order to prevent microbial attack (as taught by Yamanashi et al). Accordingly in the absence of evidence to the contrary it would have been obvious to add an antimicrobial agent to the composition of the primary reference and thus arrive at the instant invention absent evidence to the contrary. As for the amount of the antimicrobial agent, it would be obvious to utilize effective amounts to prevent microbial growth.

Claims 1-13 and 19-27 lack an inventive step under PCT Article 33(3) as being obvious over Sakai (US Patent No. 6,136,226) in view of Yamanashi et al (US Patent Application Publication No. 2003/0087074).

Sakai teaches, in the abstract, the examples and the claims, a method for manufacturing a luminous or fluorescent artificial stone comprising a powder such as a glass powder, a resin and a curing agent for the resin (see especially examples 1 and 3).

The instant claims are obvious over the reference. While the primary reference does not teach the addition of an antimicrobial agent it is known in the art to add antimicrobial agents to artificial stone compositions in order to prevent microbial attack (as taught by Yamanashi et al). Accordingly in the absence of evidence to the contrary it would have been obvious to add an antimicrobial agent to the composition of the primary reference and thus arrive at the instant invention absent evidence to the contrary. As for the amount of the antimicrobial agent, it would be obvious to utilize effective amounts to prevent microbial growth.

Claims 1-13, 19-51 and 57-65 lack an inventive step under PCT Article 33(3) as being obvious over Brubaker et al (US Patent No. 4,595,626) in view of Yamanashi et al (US Patent Application Publication No. 2003/0087074).

Brubaker et al teaches, in the abstract, the examples and the claims, the formation of a conformable tile comprising an aggregate material, a polyester resin and a curing initiator. The composition is molded under pressure, heat, vibration etc.

The instant claims are obvious over the reference. While the primary reference does not teach the addition of an antimicrobial agent it is known in the art to add antimicrobial agents to artificial stone compositions in order to prevent microbial attack (as taught by Yamanashi et al). Accordingly in the absence of evidence to the contrary it would have been obvious to add an antimicrobial agent to the composition of the primary reference and thus arrive at the instant invention absent evidence to the contrary. As for the amount of the antimicrobial agent, it would be obvious to utilize effective amounts to prevent microbial growth.

Claims 1-13, 19-51 and 57-65 lack an inventive step under PCT Article 33(3) as being obvious over Charlebois (US Patent No. 5,800,752) in view of Yamanashi et al (US Patent Application Publication No. 2003/0087074).

Charlebois teaches, in the abstract, the examples and the claims, the formation of polymer composite products by the simultaneous application of vibration, heat and pressure. The compositions include polymeric binders, aggregates and a catalyst for the binder.

The instant claims are obvious over the reference. While the primary reference does not teach the addition of an antimicrobial agent it is known in the art to add antimicrobial agents to artificial stone compositions in order to prevent microbial attack (as taught by Yamanashi et al). Accordingly in the absence of evidence to the contrary it would have been obvious to add an antimicrobial agent to the composition of the primary reference and thus arrive at the instant invention absent evidence to the contrary. As for the amount of the antimicrobial agent, it would be obvious to utilize effective amounts to prevent microbial growth.

Claims 1-13, 19-51 and 57-65 lack an inventive step under PCT Article 33(3) as being obvious over Wilkinson et al (US Patent No. 6,387,985) in view of Yamanashi et al (US Patent Application Publication No. 2003/0087074).

Wilkinson et al teaches, in the abstract, the examples and the claims, the formation of acrylic polymer based formulations comprising crushed stone, resins, fillers and also which may include curing agents. The formulation is molded using a vibro-compact mold.

The instant claims are obvious over the reference. While the primary reference does not teach the addition of an antimicrobial agent it is known in the art to add antimicrobial agents to artificial stone compositions in order to prevent microbial attack (as taught by Yamanashi et al). Accordingly in the absence of evidence to the contrary it would have been obvious to add an antimicrobial agent to the composition of the primary reference and thus arrive at the instant invention absent evidence to the contrary. As for the amount of the antimicrobial agent, it would be obvious to utilize effective amounts to prevent microbial growth.

Claims 1-65 meet the criteria set out in PCT Article 33(2) and claims 14-18 and 52-56 meet the criteria set out in PCT Article 33(3), because the prior art does not teach or fairly suggest the use of an organic antimicrobial agent in combination with artificial stone compositions.

Claims 1-65 meet the criteria set out in PCT Article 33(4), and thus are industrial applicability because the subject matter claimed can be made or used in industry.